AMENDED CLAIM SET:

1. (currently amended) A process for producing an organic compound which is an addition or substitution reaction product of a compound (A) and a compound (B) or an oxidized product thereof, wherein said product is selected from the group consisting of

~~(i) an addition or substitution reaction product or an oxidized product thereof, where an adjacent position to an oxygen atom of a compound (A1) is bonded to an atom constituting an unsaturated bond of an unsaturated compound (B1), to a methine carbon atom of a compound (B2) having a hydrocarbon group with a methine carbon atom, or to a heteroatom of a heteroatom containing compound (B3) when an oxygen atom containing compound (A1) is employed as a compound (A),~~

(i-1) an addition reaction product or an oxidized product thereof, where an adjacent position to an oxygen atom of a compound (A1) is bonded to a carbon atom of an unsaturated bond of an unsaturated compound (B1) when an oxygen-atom-containing compound (A1) is employed as a compound (A),

(i-2) a substitution reaction product or an oxidized product thereof, where an adjacent position to an oxygen atom of a compound (A1) is bonded to a methine carbon atom of a compound (B2) having a hydrocarbon group with a methine carbon atom when an oxygen-atom-containing compound (A1) is employed as a compound (A),

~~(ii) an addition or substitution reaction product or an oxidized product thereof, where a bond between a carbonyl group and an atom adjacent to a carbonyl group of a compound (A2) is broken, and a group containing the a carbonyl group is bonded to the aforementioned position of a compound (B1), (B2), or (B3) when a carbonyl group containing compound (A2) is employed as a compound (A), and~~

(ii-1) an addition reaction product or an oxidized product thereof, where a bond between a carbonyl group and an atom adjacent to a carbonyl group of a compound (A2) is broken, and a group containing the a carbonyl group is bonded to the aforementioned

position of a compound (B1) when a carbonyl-group-containing compound (A2) is employed as a compound (A),

(ii-2) a substitution reaction product or an oxidized product thereof, where a bond between a carbonyl group and an atom adjacent to a carbonyl group of a compound (A2) is broken, and a group containing the a carbonyl group is bonded to the aforementioned position of a compound (B2) when a carbonyl-group-containing compound (A2) is employed as a compound (A),

~~(iii) an addition or substitution reaction product or an oxidized product thereof, where a methine carbon atom of a compound (A3) is bonded to the aforementioned position of a compound (B1), (B2), or (B3) when a compound (A3) containing a hydrocarbon group with a methine carbon atom is employed as a compound A,~~

(iii-1) an addition reaction product or an oxidized product thereof, where a methine carbon atom of a compound (A3) is bonded to the aforementioned position of a compound (B1) when a compound (A3) containing a hydrocarbon group with a methine carbon atom is employed as a compound A, and

(iii-2) a substitution reaction product or an oxidized product thereof, where a methine carbon atom of a compound (A3) is bonded to the aforementioned position of a compound (B2) when a compound (A3) containing a hydrocarbon group with a methine carbon atom is employed as a compound A,

said process comprising the step of allowing (A) a compound capable of forming a stable radical and being selected from

(A1) oxygen-atom-containing compounds each having a carbon-hydrogen bond at the adjacent position to an oxygen atom,

(A2) carbonyl-group-containing compounds, and

(A3) compounds each having a hydrocarbon group with a methine carbon atom

to react with (B) a radical scavenging compound selected from

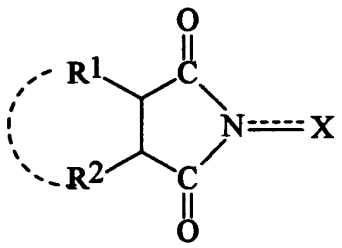
(B1) unsaturated compounds, and

(B2) compounds each having a hydrocarbon group with a methine carbon atom, ~~and~~

~~(B3) heteroatom-containing compounds,~~

provided that if a 1,2-dicarbonyl compound or its hydroxy reductant is used as the compound (A), the compound (B) is a radical scavenging compound (B1) ~~selected from the compounds (B1) and (B3)~~,

in the presence of a catalytic imide compound and in the presence of molecular oxygen ~~and/or a radical generator~~, by catalysis of the imide compound, wherein the imide compound is shown by the following formula (1):



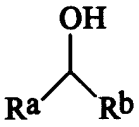
(1)

wherein each of R^1 and R^2 is, identical to or different from each other, a hydrogen atom, a halogen atom, an alkyl group, an aryl group, a cycloalkyl group, a hydroxyl group, an alkoxy group, a carboxyl group, an alkoxycarbonyl group, or an acyl group, where R^1 and R^2 may be combined to form a double bond, or an aromatic or non-aromatic ring; X is an oxygen atom or a hydroxyl group; and one or two N-substituted cyclic imido groups indicated in the formula (1) may be further bonded to said R^1, R^2, or to the double bond or aromatic or non-aromatic ring formed together by R^1 and R^2,

to yield a product of an addition or substitution reaction of said compound (A) and said compound (B) or an oxidized product thereof.

2. (withdrawn - currently amended) A process for producing an organic compound according to claim 1, which process comprises an addition reaction wherein

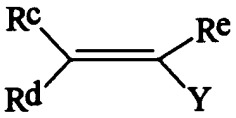
compound (A) is (A11) an alcohol shown by the following formula (2):



(2)

wherein each of R^a and R^b is, identical to or different from each other, a hydrogen atom or an organic group, where R^a and R^b may be combined to form a ring with the adjacent carbon atom, and

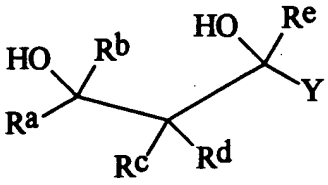
compound (B) is (B11) an active olefin shown by the following formula (3):



(3)

wherein each of R^c, R^d, and R^e is, identical to or different from one another, a
hydrogen atom or an organic group, and Y is an electron attracting group, where R^c, R^d, R^e, and Y may be combined to form a ring with the adjacent carbon atom or carbon-carbon bond, and

wherein the organic compound which is an addition or substitution reaction product or an oxidized product thereof is a 1,3-dihydroxy compound shown by the following formula (4):

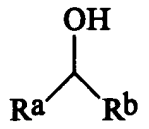


(4)

wherein R^a, R^b, R^c, R^d, R^e, and Y have the same meanings as defined above.

3. (currently amended) The process for producing an organic compound according to claim 1, which process comprises an addition reaction wherein

compound (A) is (A11) an alcohol shown by the following formula (2):

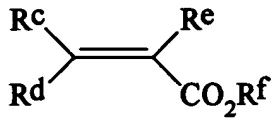


(2)

wherein each of R^a and R^b is, identical to or different from each other, a hydrogen atom or an organic group, where R^a and R^b may be combined to form a ring with the adjacent carbon atom,

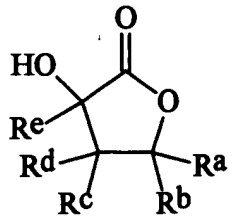
and

compound (B) is (B12) an α,β-unsaturated carboxylic acid derivative shown by the following formula (5):



(5)

wherein each of R^c, R^d, R^e, and R^f is, identical to or different from one another, a hydrogen atom or an organic group, where R^c, R^d, and R^e may be combined to form a ring with the adjacent carbon atom or carbon-carbon bond, and wherein the organic compound which is an addition or substitution reaction product or an oxidized product thereof is an α-hydroxy-γ-butyrolactone derivative shown by the following formula (6):



(6)

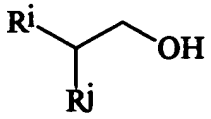
wherein R^a, R^b, R^c, R^d, and R^e have the same meanings as defined above.

4. - 13. (cancelled).

14. (withdrawn - currently amended) A process for producing

an organic compound according to claim 1, which process comprises an addition reaction wherein

compound (A) is (A12) an alcohol shown by the following formula (2a):



(2a)

wherein each of R^i and R^j is, identical to or different from each other, a hydrogen atom or an organic group, where R^i and R^j may be combined to form a ring with the adjacent carbon atom,

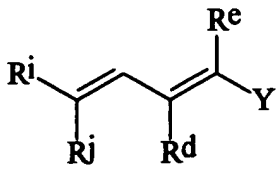
and

compound (B) is (B13) an active olefin shown by the following formula (3a):

(3a)

wherein each of R^d and R^e is, identical to or different from each other, a hydrogen atom or an organic group; and Y is an electron attracting group, where R^d, R^e and Y may be combined to form a ring with the adjacent carbon atom or carbon-carbon bond,

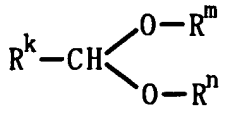
and wherein the organic compound which is an addition ~~or substitution~~ reaction product ~~or an oxidized product thereof~~ is a conjugated unsaturated compound shown by the following formula (11):



(11)

wherein R^d, R^e, R^i, R^j and Y have the same meanings as defined above.

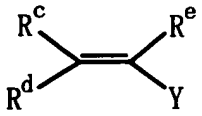
15. (withdrawn - currently amended) A process for producing an organic compound according to claim 1, which process comprises an addition reaction wherein (A13) an acetal shown by the following formula (12):



(12)

wherein each of R^k, R^m, and R^n is, identical to or different from one another, a hydrogen atom or an organic group, where R^m and R^n may be combined to form a ring with the adjacent two oxygen atoms and the carbon atom indicated in the formula,

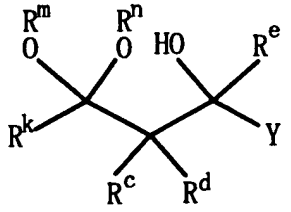
is allowed to react with (B11) an active olefin shown by the following formula (3):



(3)

wherein each of R^c, R^d, and R^e is, identical to or different from one another, a hydrogen atom or an organic group, and Y is an electron attracting group, where R^c, R^d, R^e, and Y may be combined to form a ring with the adjacent carbon atom or carbon-carbon bond,

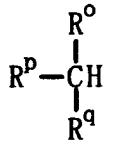
in the presence of molecular oxygen by catalysis of the imide compound of the formula (1), to yield a β-hydroxyacetal compound shown by the following formula (13):



(13)

wherein R^c, R^d, R^e, R^k, R^m, R^n, and Y have the same meanings as defined above.

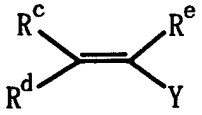
16. (withdrawn - currently amended) A process for producing an organic compound according to claim 1, which process comprises an addition reaction wherein (A31) a compound having a methine carbon atom and being shown by the following formula (14):



(14)

wherein each of R^o, R^p, and R^q is, identical to or different from one another, an organic group, where R^o, R^p, and R^q may be combined to form a ring with the adjacent carbon atom,

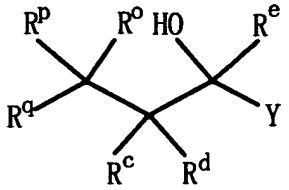
is allowed to react with (B11) an active olefin shown by the following formula (3):



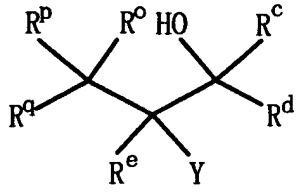
(3)

wherein each of R^c, R^d, and R^e is, identical to or different from one another, a hydrogen atom or an organic group; and Y is an electron attracting group, where R^c, R^d, and Y may be combined to form a ring with the adjacent carbon atom or carbon-carbon bond,

in the presence of molecular oxygen by catalysis of the imide compound of the formula (1), to yield at least one hydroxy compound selected from the following formulae (15) and (16):



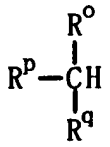
(15)



(16)

wherein R^c, R^d, R^e, R^o, R^p, R^q, and Y have the same meanings as defined above.

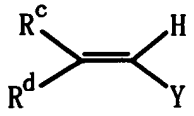
17. (withdrawn - currently amended) A process for producing an organic compound according to claim 1, which process comprises an addition reaction wherein (A31) a compound having a methine carbon atom and being shown by the following formula (14):



(14)

wherein each of R^o, R^p, and R^q is, identical to or different from one another, an organic group, where R^o, R^p, and R^q may be combined to form a ring with the adjacent carbon atom,

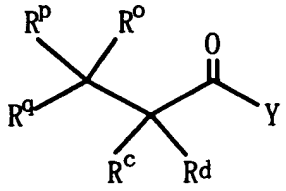
is allowed to react with (B14) an active olefin shown by the following formula (3b):



(3b)

wherein each of R^c and R^d is, identical to or different from each other, a hydrogen atom or an organic group; and Y is an electron attracting group, where R^c, R^d, and Y may be combined to form a ring with the adjacent carbon atom or carbon-carbon bond,

in the presence of molecular oxygen by catalysis of the imide compound of the formula (1), to yield a carbonyl compound shown by the following formula (17):



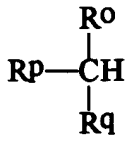
(17)

wherein R^c, R^d, R^o, R^p, R^q, and Y have the same meanings as defined above.

18. (withdrawn - currently amended) The process for producing an organic compound according to claim 1, which process comprises

an addition reaction wherein

compound (A) is (A31) a compound having a methine carbon atom and being shown by the following formula (14):

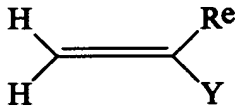


(14)

wherein each of R^o, R^p and R^q is, identical to or different from one another, an organic group, where R^o, R^p, and R^q may be combined to form a ring with the adjacent carbon atom,

and

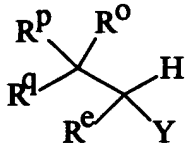
compound (B) is (B15) an active olefin shown by the following formula (3c):



(3c)

wherein R^e is a hydrogen atom or an organic group; and Y is an electron attracting group,

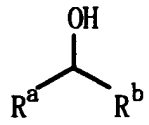
and wherein the organic compound which is an addition or substitution reaction product or an oxidized product thereof is an organic compound shown by the following formula (18):



(18)

wherein R^e, R^o, R^p, R^q, and Y have the same meanings as defined above.

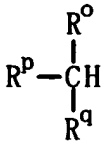
19. (withdrawn - currently amended) A process for producing an organic compound according to claim 1, which process comprises a substitution reaction wherein (A11) an alcohol shown by the following formula (2):



(2)

wherein each of R^a and R^b is, identical to or different from each other, a hydrogen atom or an organic group, where R^a and R^b may be combined to form a ring with the adjacent carbon atom,

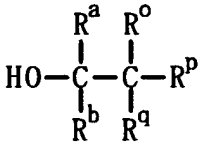
is allowed to react with (B21) a compound having a methine carbon atom and being shown by the following formula (14):



(14)

wherein each of R^o, R^p, and R^q is, identical to or different from one another, an organic group, where R^o, R^p, and R^q may be combined to form a ring with the adjacent carbon atom,

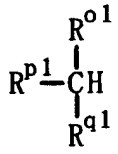
in the presence of molecular oxygen by catalysis of the imide compound of the formula (1), to yield an alcohol shown by the following formula (19):



(19)

wherein R^a, R^b, R^o, R^p, and R^q have the same meanings as defined above.

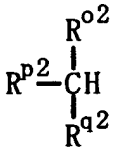
20. (withdrawn - currently amended) A process for producing an organic compound according to claim 1, which process comprises a substitution reaction wherein (A32) a compound having a methine carbon atom and being shown by the following formula (14a):



(14a)

wherein each of R^{o1}, R^{p1} and R^{q1} is, identical to or different from one another, an organic group, where R^{o1}, R^{p1} and R^{q1} may be combined to form a ring with the adjacent carbon atom,

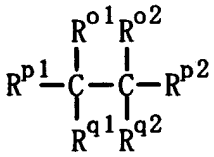
is allowed to react with (B22) a compound having a methine carbon atom and being shown by the following formula (14b):



(14b)

wherein each of R^{o2}, R^{p2} and R^{q2} is, identical to or different from one another, an organic group, where R^{o2}, R^{p2} and R^{q2} may be combined to form a ring with the adjacent carbon atom,

in the presence of molecular oxygen by catalysis of the imide compound of the formula (1), to yield a coupling product shown by the following formula (20):



(20)

wherein R^{o1}, R^{p1}, R^{q1}, R^{o2}, R^{p2} and R^{q2} have the same meanings as defined above.

21. (original) A process according to one of claims 1 to 3 and 14 to 20, wherein a metallic compound is used as a co-catalyst.

22. (cancelled).

23. (previously presented) A process according to claim 3 for preparing α-hydroxy-γ,γ-dimethyl-γ-butyrolactone, in which:

reactant (A) is (A1), an oxygen-atom-containing compound having a carbon-hydrogen bond at the adjacent position to an oxygen atom, and embodiment (A11) of (A1) is an alcohol of Formula (2), reactant (A) being 2-propanol;

reactant (B) is (B1), an unsaturated compound, and embodiment (B12) of (B1) is an α,β-unsaturated carboxylic acid derivative of Formula (5), reactant (B) being ethyl acrylate; and

the imide compound of Formula (1) is N-hydroxyphthalimide.

24. (previously presented) A process for preparing α-hydroxy-γ,γ-dimethyl-γ-butyrolactone according to claim 23, wherein a metallic compound is used as a co-catalyst.